STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0107166
Owner:	Fairview Greenhouse, Inc.
Address:	1030 East 13th Street, Carthage, MO 64836
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Fairview Greenhouse, Inc.
Facility Address:	1030 East 13th Street, Carthage, MO 64836
Legal Description:	SW¼, NE¼, Sec. 10, T28N, R31W, Jasper County
Receiving Stream:	Unnamed Tributary to Spring River (U)
First Classified Stream and ID:	Spring River (P) (03160)
USGS Basin & Sub-watershed No.:	(11070207-140002)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

Outfall #001 – Greenhouse Operations - SIC #0181

Single cell lagoon / septic tanks.

Design flow is < 1 MGD.

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

December 3, 2004
Effective Date

Stephen M. Mahfood, Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

December 2, 2009
Expiration Date

R. Bruce Martin, Director, Southwest Regional Office

MO 780-0041 (10-93)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001						
Flow	MGD	*		*	once/quarter**	24 hr. total
Biochemical Oxygen Demand$_5$	mg/L		45	30	once/quarter**	grab
Total Suspended Solids	mg/L		45	30	once/quarter**	grab
pH – Units	SU	***		***	once/quarter**	grab
Nitrate-Nitrite as N	mg/L	*		*	once/quarter**	grab
Ammonia as N	mg/L	*		*	once/quarter**	grab
Total Phosphorus as P	mg/L	1.5		1.0	once/quarter**	grab
Temperature	°C	*		*	once/quarter**	grab
Each pesticide stored or handled within the last three years. (Note 1)	µg/L	(Note 1)			once/year****	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JANUARY 28, 2005.						
Whole Effluent Toxicity (WET) Test	% Survival	(See Special Conditions)			once/year in September	24 hr. composite
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE OCTOBER 28, 2005. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Part I STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

MO 780-0010 (8/91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

* Monitoring requirement only.

** Sample once per quarter in the months of **March, June, September, and December**. Reports shall be submitted by the 28th day of the month following the reporting period, e.g. Reporting period is the 1st quarter (sample collected in March), report due by April 28th.

*** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.

**** Sample once per year in the month of September.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

Note 1 Effluent Limitations for Pesticides:

For individual pesticides listed in the water quality standards (10 CSR 20-7.031), the concentration at the monitoring point shall not exceed the most stringent of the aquatic-life protection, human health fish consumption, drinking water supply criteria, or health advisory levels. If the quantification limit is higher than this value for individual pesticides, the quantification limit shall not be exceeded.

Other potentially toxic substances for which sufficient toxicity data are not available may not be released to classified waters of the state until safe levels are demonstrated through adequate bioassay studies [10 CSR 20-7.031(4)]. Other bulk pesticides not listed below and other potentially toxic substances for which safe levels are demonstrated through adequate bioassay studies may be released to waters of the state, provided that the concentration at the monitoring point shall no exceed the demonstrated safe levels.

PESTICIDE	LIMIT	SOURCE
Demeton	3 ppb	QL*
Endosulfan	0.5	QL*
Guthion	5	QL*
Malathion	5	QL*
Parathion	1	QL*
2,4-D	70	DWSC
2,4,5-TP	50	DWSC
Chlorpyrifos	5**	QL*
Alachlor	10**	DWSC
Atrazine	15**	DWSC
Carbofuran	40	DWSC
Dalapon	200	DWSC
Dibromochloropropane	5**	QL*
Dinoseb	35**	DWSC
Diquat	20	DWSC
Endothall	100	DWSC
Ethylene dibromide	5**	QL*
Oxamyl (vydate)	200	DWSC
Picloram	500	DWSC
Simazine	20**	DWSC
Endrin	0.5	QL*
Aldrin	0.5	QL*
Diedrin	0.5	QL*
Heptachlor	0.5	QL*
Heptachlor Epoxide	0.5	QL*
Methoxychlor	2	QL*
Mirex	2	QL*
Toxaphene	5	QL*
Lindane	0.5	QL*
A,B,G-BHC	0.5	QL*
Chlordane	1	QL*
Ametryn	60	DWSC
Baygon	3	DWSC
Bentazon	20	DWSC
Bis-2-chloroisopropyl ether	300	DWSC
Bromacil	90	DWSC
Bromochloromethane	90	DWSC
Bromomethane	10	DWSC
Butylate	350	DWSC
Carbaryl	700	DWSC
Carboxin	700	DWSC
Chloramben	100	DWSC
o-chlorotoluene	100	DWSC

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

Note 1 Effluent Limitations for Pesticides (continued):

PESTICIDE	LIMIT	SOURCE
p-chlorotoluene	100	DWSC
DCPA (dacthal)	4000	DWSC
Diaznon	0.6	DWSC
Dicamba	200	DWSC
Diisopropyl methylphosphonate	600	DWSC
Dimethyl methylphosphonate	100	DWSC
1,3-dinitrobenzene	1	DWSC
Diphenamid	200	DWSC
Diphenylamine	200	DWSC
Disulfoton	0.3	DWSC
1,4-dithiane	80	DWSC
Diuron	10	DWSC
Fenamiphos	2	DWSC
Fluometron	90	DWSC
Fluorotrichloromethane	2000	DWSC
Fonofos	10	DWSC
Hexazinone	200	DWSC
Maleic hydrazide	4000	DWSC
MCPA	10	DWSC
Methyl parathion	2	DWSC
Metolachlor	70	DWSC
Metribuzin	100	DWSC
Naphthalene	20	DWSC
Nitroguanidine	700	DWSC
p-nitrophenol	60	DWSC
Paraquat	30	DWSC
Pronamide	50	DWSC
Propachlor	90	DWSC
Propazine	10	DWSC
Propham	100	DWSC
2,4,5-T	70	DWSC
Tebuthiuron	500	DWSC
Terbacil	90	DWSC
Terbufos	0.9	DWSC
1,1,1,2-Tetrachloroethane	70	DWSC
1,2,3-trichloropropane	40	DWSC
Trifluralin	5	DWSC
Trinitroglycerol	5	DWSC
Trinitrotoluene	2	DWSC

* Quantification limit.

** Allowance made for 5:1 dilution ratio.

QL = Quantification limit, as per the Department's Environmental Services Program, 1991.

DWSC = Water Quality Standards drinking water supply criteria, for protection of surface water supplies and ground water (these are taken from federal MCLs).

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:

   (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:

      (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

      (2) controls any pollutant not limited in the permit.

   (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.

   (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

   The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.

3. Permittee will cease discharge by connection to areawide wastewater treatment system within 90 days of notice of its availability.

4. Changes in Discharges of Toxic Substances

   The permittee shall notify the Director as soon as it knows or has reason to believe:

   (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"

      (1) One hundred micrograms per liter (100 µg/L);

      (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

      (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;

      (4) The level established in Part A of the permit by the Director.

   (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

5. Report as no-discharge when a discharge does not occur during the report period.

C. SPECIAL CONDITIONS (continued)

6. Water Quality Standards

(a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.

(b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:

(1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;

(2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;

(3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;

(4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;

(5) There shall be no significant human health hazard from incidental contact with the water;

(6) There shall be no acute toxicity to livestock or wildlife watering;

(7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;

(8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. Industrial Sludge Disposal

(a) Disposal of industrial sludge is not authorized by this permit. Industrial sludge shall be disposed at a permitted solid waste disposal facility in accordance with 10 CSR 80; or if the sludge is determined to be hazardous waste, shall be disposed at a permitted hazardous waste disposal facility pursuant to 10 CSR 25.

(b) Non-hazardous sludge that is disposed on site or that is exempted under 10 CSR 80 must obtain applicable permits under 10 CSR 20-6.015 and 10 CSR 20-6.200.

(c) Each effluent monitoring report shall also specify the date any sludge is removed from the facility, who removed the sludge and the number of gallons or quantity of sludge removed. The final disposal location shall be reported, including the name of the disposal facility, the solid waste or hazardous waste disposal permit number, and date of permit issuance.

(d) This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act.

C. SPECIAL CONDITIONS (continued)

8. Whole Effluent Toxicity (WET) tests shall be conducted as follows:

SUMMARY OF WET TESTING FOR THIS PERMIT				
OUTFALL	A.E.C. %	FREQUENCY	SAMPLE TYPE	MONTH
001	100%	once/year	24 hr. composite	September

(a) Test Schedule and Follow-Up Requirements

(1) Perform a single-dilution test in the months and at the frequency specified above. If the effluent passes the test, do not repeat the test until the next test period. Submit test results along with complete copies of the test reports as received from the laboratory within 30 calendar days of availability to the WPCP, Planning Section, P.O. Box 176, Jefferson City, MO 65102.

(2) If the effluent fails the test, a multiple dilution test shall be performed within 30 calendar days, and biweekly thereafter, until one of the following conditions are met:

a. THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.

b. A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.

(3) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WPCP, Planning Section, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.

(4) Additionally, the following shall apply upon failure of the third test: A toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall contact WPCP, Planning Section to ascertain as to whether a TIE or TRE is appropriate. The permittee shall submit a plan for conducting a TIE or TRE to the Planning Section of the WPCP within 60 calendar days of the date of DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.

(5) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.

(6) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.

(7) All failing test results shall be reported to WPCP, Planning Section, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.

(8) When WET test sampling is required to run over one DMR period, each DMR report shall contain information generated during the reporting period.

(9) Submit a concise summary of all test results with the annual report.

C. SPECIAL CONDITIONS (continued)

(b) PASS/FAIL procedure and effluent limitations:

(1) To pass a single-dilution test, mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; p = 0.05) than that observed in the upstream receiving-water control sample. The appropriate statistical tests of significance will be those outlined in the most current USEPA acute toxicity manual or those specified by the MDNR.

(2) To pass a multiple-dilution test:

a. the computed percent effluent at the edge of the zone of initial dilution, Acceptable Effluent Concentration (AEC), must be less than three-tenths (0.3) of the LC_{50} concentration for the most sensitive of the test organisms; or,

b. all dilutions equal to or greater than the AEC must be nontoxic. Failure of one multiple-dilution test is an effluent limit violation.

(c) Test Conditions

(1) Test Type: Acute Static non-renewal

(2) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.

(3) Test period: 48 hours at the "Acceptable Effluent Concentration" (AEC) specified above.

(4) When dilutions are required, upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.

(5) Single-dilution tests will be run with:

a. Effluent at the AEC concentration;

b. 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and

c. reconstituted water.

(6) Multiple-dilution tests will be run with:

a. 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC;

b. 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and

c. reconstituted water.

(7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.

C. SPECIAL CONDITIONS (continued)

SUMMARY OF TEST METHODOLOGY FOR WHOLE-EFFLUENT TOXICITY TESTS

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless more stringent methods are specified by the DNR, the procedures shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms,

Test conditions for Ceriodaphnia dubia:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16-h light, 8-h dark
Size of test vessel:	30 ml (minimum)
Volume of test solution:	15 ml (minimum)
Age of test organisms:	<24 h old
No. of animals/test vessel:	5
No. of replicates/concentration:	4
No. of organisms/concentration:	20 (minimum)
Feeding regime:	None (feed prior to test)
Aeration:	None
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test acceptability criterion:	90% or greater survival in controls

Test conditions for (Pimephales promelas):

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16-h light/ 8-h dark
Size of test vessel:	250 ml (minimum)
Volume of test solution:	200 ml (minimum)
Age of test organisms:	1-14 days (all same age)
No. of animals/test vessel:	10
No. of replicates/concentration:	4 (minimum) single dilution method 2 (minimum) multiple dilution method
No. of organisms/concentration:	40 (minimum) single dilution method 20 (minimum) multiple dilution method
Feeding regime:	None (feed prior to test)
Aeration:	None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min.
Dilution water: Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.	
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test Acceptability criterion:	90% or greater survival in controls